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ORIGINAL ARTICLES.

IS THE DISLOCATION OF THE LENS INTO THE VITREOUS EVER JUSTIFIABLE?*

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CHICAGO.

RECENTLY several articles have appeared, notably one by Powers of England, wherein a plea was made for the occasional performance of an operation for cataract which at present writing is deemed obsolete. I bear reference to the operation of sclero- or keratonyxis, or, as it is more commonly called, depression of the lens. I say a plea is being made, and it is indeed a plea worthy of our sincerest recognition, though many may think no good ever rested in a sclero- or keratonyxis. But the points about to be presented may induce a change of opinion, or perhaps the discussion may so evolve the matter as to be in itself a veritable plea for the occasional performance of said operation in selected cases.

At the present acme of our ophthalmic practice and surgery it may indeed seem like attempting a retrogression instead of an onward progression in endeavoring to proclaim

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any good for an apparently so remotely relegated operation as "depression." Yet, in spite of this acumen in our surgery of to-day, a few of the "surgical procedures of ye ancient times," when viewed and practiced under the dictum of modern asepsis and antisepsis and applied in selected cases, will be found to be *secundum artem*, as well as to be good surgery and practice. One of these very few methods is the operation of depression itself.

The plea is made for the failures resulting from the extraction method, a part of the so-called five per cent. of failures in our present day cataract operations. In addition, it is a plea for such patients upon whom no one would think of performing a linear extraction, or any other kind of cataract operation, save it be the depression; because, as we shall see later, the condition of the patient is such as to positively preclude cataract extraction. The latter perhaps are but ¼ per cent. to ½ per cent. of the entire number of cataracts presented for operation.

The term dislocation was chosen in place of scleronyxis, keratonyxis, depression or couching—firstly, because all are a dislocation in the true sense of the word; secondly, because we are all more or less familiar with a dislocated lens in the vitreous body, rather than with a couched or depressed lens. This being so, the range of discussion will be larger, broader, and of more value. For, the changes in the eyeball incident to a scleronyxis are the same as obtain in a complete posterior dislocation of the crystalline.

In determining whether or not the scleronyxis has a substantial status at the present day, we must ascertain the probable indications and results that follow such a method.

Again, it is the pathological or pseudo-physiological process, if you so please, which obtains in any operation that more or less determines its legitimacy as well as its feasibility. Furthermore, if we, by any logical operation as a substitute for an extraction, can reduce the percentage of failures now prevalent in extraction, or if we can revive a method by which we can operate upon those whom our judgment now gainsays an operation because the present mode of cataract extraction is for them deemed inapplicable, then certainly this plea is opportune and well taken. As in everything, so in

this question of a depression, it is largely a measure of good judgment.

True indeed, the physiology of the eye has undoubtedly stamped scleronyxis as inferior to extraction as a universal procedure. Yet the exigencies of certain cases, which place them beyond the pale of the extraction method, even to-day would demand an interference, though an obsolete method has to be resorted to in order to accomplish the desired object. This is so because one method offers a probable chance of success; the other the same probable chance of failure.

Neither time nor space will permit the writer to recall to you the valid reasons why sclero- or keratonyxis are now practically obsolete. Suffice it to say, that chloroform, cocaine, asepsis, antisepsis, improved surgical technique, and the physiology of the eye have been the potent factors in causing the universal adoption of the linear extraction for cataract. However, as we all know, even this ideal method of cataract extraction has in certain cases, under certain conditions of the patient, no justification in its execution, because the element of danger and failure outweighs the element of probable success. When the latter conditions present themselves, it behooves us to consider the other methods at our command, and one of these methods is depression.

Now, in what class of cases would a scleronyxis be justifiable? Without elaborately detailing all the reasons why, but only mentioning the salient ones in a few, we may include in this category:

1. The insane.
2. Epileptic.
3. Hæmophilic.
4. Cases with a tremulous iris or fluid vitreous, but without choroiditis or retinitis.
5. Cases with incurable dacryocystoblenorrhœa or conjunctivitis.
6. Extreme old age, with its attending infirmities.
7. Cases with incurable bronchitis and cough.
8. Cases in which one eye was lost by suppuration, and indications pointed strongly to the same fate if the other lens was extracted.
9. In shrunken and secondary cataracts—*i. e.*, secondary to some inflammatory reaction.

10. In partial posterior dislocations with tremulous iris.

This list of cases comprises perhaps all the conditions in which a reclination could in any light be considered as justifiable or feasable.

By giving each one of this classification a careful and scrutinizing consideration, you will not fail to find that each at times will present suitable cases for a scleronyxis; and that, on the other hand, it would be bad surgery to perform extraction in such given cases, the wiser plan being not to operate, save it be by depression. At the same time, this class of cases includes the majority which are now lost by the extraction method. Please to bear in mind that the writer is in no way arguing for the universal application, but only for the exceptional cases in which depression is indicated.

Richardson Cross recently made the sweeping statement that he had never seen any harm or degeneration result from the presence of the lens in the vitreous. This certainly must be taken *cum grano salis*. Perhaps he had reference only to such cases in which it was the only operation offering a reasonable success. No doubt this is true. For Quaglino of Pavia, who, though a partisan for extraction, was compelled to resort more often to depression in his cases of cataract in Lombardy, because the surroundings and condition of the peasants would permit of no other, says the accidents most frequently observed are: the rising up of the cataract, iritis, iridochoroiditis, ciliary neuralgia, secondary cataract, and acute glaucoma.

On taking these accidents into consideration, they compare quite favorably with the ones we now and then have when the lens is extracted—e. g., panophthalmitis, excessive loss of vitreous, detachment of the retina, excessive suppuration of the wound, and prolapse of the iris with its occasional serious consequences. The former complications can be more readily controlled than the latter. Again, depression is indicated in just such cases, lost by an extraction because of said accidents, when we have to operate on the fellow eye. It is well known that where one method fails another often succeeds admirably. However, please note that depression is never indicated when a retinitis or a choroiditis is present.

Followers of the Vienna school, such as Fuchs and Elsch-

ing, even to-day recommend a depression in shrunken and secondary cataracts. If it is ever indicated in such cases, it is certainly in cases we know would be lost by the extraction method, even if this latter percentage is exceedingly low at present. As far back as 1843, Himly remarked that rarely severe inflammatory reactions followed depressions, and if they did ensue, they seldom left bad consequences. This observation was made among the Hindoos, where even to-day the depression method outnumbers the extraction. That is to say, this is among the native operators. Even to-day in India depression would not be so prevalent were it not attended with a fair amount of success, though performed by itinerants. All English surgeons in India do admit that the successes far outnumber the failures. The Hindoo-European operators only see the complicated cases and failures, and in these they often restore a useful eye by extracting the lens.

Certainly the immediate results in depressing the lens are brilliant. Yet, as Powers says: "It is a difficult matter to say whether under any circumstances the depression would give equally good results, because we have but few statistics at hand that deal with large numbers, or that have been undertaken with the same care and precaution as are now adopted in cases of extraction." Still, in selected cases and under the present regime, the depression is indicated and will yield satisfactory results. No doubt it will always be the operation of last resort, and properly so. But this does not say that at no time would indications ever present themselves, as they surely do, though few.

Von Graefe, in 1858, advised reclination in old and decrepit cases, or such as had lost one eye by suppuration and in which indications pointed to the same in the other eye if it was similary operated upon. His remarks hold good to-day, though they were made prior to the period of Listerism. Certainly to-day the depression operation would yield better results in such cases as were lost by the extraction and are even now lost at present, though performed aseptically.

Lately, Posey of Philadelphia quoted several successful depressions in the violent insane, with great mental improvement. Who would undertake the extraction in such cases?

But few, we think. For, a certain amount of rest, care and bandage is obligatory in the extraction method. This is not so in the depression of a cataract, as the patient requires scarcely any after-attention. Are not these points often devoutly wished for in the class of cases just mentioned? And, because we cannot attain them if we extract the lens, we abandon sight for the patient, and thus retard his mental improvement. Is not this also true for the epileptic, extremely aged, as well as for the flabby and phlegmatic patient? These patients are more prone to complications than the more wide-awake and robust. How often is an inveterate chronic bronchitis with a cough the cause of total loss of the eye, or an obstinate catarrhal conjunctivitis or dacryocystoblenorrhœa the cause of a fatal suppuration. In these cases, by means of minimum surgical interference we attain the greatest good and run the least danger. Then, too, how often is it that it is only a matter of a few years the patient has to live that sight would be precious, yet is denied because of valid reasons for not extracting, but no valid reasons for not depressing the lens.

Though a cataract is rare in the hæmophilic, yet who would be so rash as to extract it? Depression here is absolutely safe, and certainly indicated if anywhere.

Again, in cases of tremulous iris and fluid vitreous, with a deeply-set globe and a readily-shifting lens, who cares to endanger the eye by excessive loss of vitreous? Even if in these cases the immediate injection of a normal salt solution would restore a plump and very useful eye, provided it was successful, it would be difficult to perform. Still these are chances and indications one would not care to look for, but rather avoid in every possible way.

Just as a few substantial reasons have been given for performing a reclination instead of an extraction in the variety of cases just alluded to, so can valid reasons be assigned for the remainder of the category spoken of in the earlier portions of this paper. But, as there are others yet to read, no mention will be made of them. We will not discuss the method of operating, as this is not the purpose of the paper; we wish only to speak of the indications.

A word or two concerning the attending complications in performing the reclination may not be amiss. As already stated, iritis, irido-choroiditis, ciliary neuralgia, acute glaucoma, and secondary cataract are the main ones. The rising up of the depressed lens is not to be looked upon as a serious complication. Each and every one of the other complications can be promptly and properly met with in a medicinal way. Should this prove of no avail, the removal of the lens, as in the occasional rising up of the lens, or an iridectomy, can be attempted, and success still follow. Statistics of the older operator and of the modern, who often find a traumatic reclination to deal with, will bear out this point (vide references).

It is a noticable fact that the results following a traumatic dislocation of the lens into the vitreous, the injury in and out of itself was often sufficient to cause said complications. But very seldom do any complications of any serious nature supervene when the lens has been dislocated by an indirect trauma or a trauma not directly affecting the eye, though on the same side. A study of some of the references given below will show that a traumatic depression was often followed by good vision, lasting for years. This, in part, is true of the operation of depression itself, as it practically causes little or no interference with the eye. In fact, the pathological changes in the eye due to the lens being in the vitreous are the same whether the lens is depressed by an instrument or a trauma. The suspensory ligament and the zonula of Zinn are not more often torn by a trauma than by a reclination. However, should the reclination be a success, the vitreous will always have some opacities, but these seldom interfere with vision to any great extent, whether the lens is reclinated or dislocated by a trauma.

The English surgeons who have served in India often speak of the brilliancy of the results in reclination as obtained by the native operators. And to-day it is perhaps only the English surgeon who performs a reclination in selected cases. In this connection with reclination, it may be probably of interest to note the last scientific statistic made before the operation passed into desuetude. This is the last series of 26 cases operated upon by Quaglino of Pavia in 1867.

In this series there were twenty-five successes and but one failure—a goodly showing indeed.

In briefly summing up the most salient points of the paper, we may tabulate them as follows:

1. The percentage of failure in the class of cases in which a depression can be performed is no larger, on the contrary less, than in the same cases operated upon by extraction.

2. Do not depress a lens in cases with choroiditis or retinitis.

3. Consider depression in all cases where one eye has been lost by an extraction, and conditions point convincingly to the same in the other eye.

4. Depression of the lens must not be indiscriminately performed, but only in such cases where the contraindications for extraction outweigh its own objections.

Finally, the writer considers reclination of the lens as an exceptional procedure, and can only regard it as unquestionably indicated in such a class of cases as has been alluded to, when the general constitution of the patient or the previous experience with the fellow eye unhesitatingly point to a failure if the extraction method were resorted to. It should rarley be performed; for it is only in rare instances that suitable cases present themselves. In any given case, weigh full well the pros and cons of either operation, and, if the balance is in favor of one or the other choose that one, be it a reclination or an extraction.

As it is largely a matter of good judgment and discretion, we have no cause to find fault with anyone who exercises his prerogative as a physician and thus practices *secundum artem*, though he does resort to a method at present cast into oblivion and only receiving a bare mention in the modern text-books as an historical operation.

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DISCUSSION.

Dr. A. Alt, St. Louis.—The question whether with our present knowledge depression of the lens is still a justifiable procedure has of late been discussed by Andrew, Rampoldi, Businelli, Valude, True, Panas, Dor and Gayet. All of them reported certain cases in which they thought themselves justified in not attempting extraction of the cataractous lens, and the results seemed to bear out their reasoning. However, Wassilyeff and Andogaki (*Klin. Monatsbl.*, August, 1901,) when reporting on a series of experimental studies, on the reclination of cataracts in rabbits, sum up their findings by stating that reclination causes a great many more complications than extraction, and that it is successful in only a small percentage of cases. The complications were chiefly detachment of the retina, iridocyclitis and obliteration of the iris angle. They think, therefore, that reclination is a justly abandoned method of cataract operation. The author mentioned as one sort of cases for reclination, such in which one eye had been unsuccessfully operated on by extraction. These cases, I think, should, as a rule, not be included in the cases in which reclination would

be justifiable. I have had time and again occasion to extract a cataract successfully in which an unsuccessful operation on the fellow-eye had preceded. I could only think of one reason, and that is when the patient would rather remain blind than to allow the extraction of a cataract from the second eye. In my opinion extraction should be the rule in all cases, except, perhaps, in very old and feeble subjects, whose death is more or less imminent and who would give anything to be once more able to see the faces of their loved ones, before parting.

Dr. Jackson, Denver.—When I commenced to practice I knew a gentleman who had studied in Paris in the 50's who did most of the ophthalmic operations in that section of the country and who, I think, never did an extraction. He did reclination altogether. I knew some of his cases some years after it was done and I do not know of any that retained vision more than five or six years after the operation. I am inclined to think that we do not have any statistics, except those which we find in the books of the middle of the last century, at least I do not recall any now, that are gathered with reference to the ultimate results. I think it would be rash indeed to answer the question of the title of the paper in the negative, but I think I have never seen a case in which I would consent to risk the reclination. We see in cases of dislocation of the lens into the vitreous body, whether traumatic or congenital, that secondary glaucoma is very apt to develop. With reference to cataract extraction in the insane, I recall one case in which one eye had been lost and in which I was called upon to operate upon the other eye and got a good result without complication. With reference to epilepsy, I recall a young woman about 30 with cataract in both eyes, on which I did extraction. She had an epileptic seizure in a few days after the operation, yet everything went well. A case of violent epileptic convulsions a day or two after extraction was shortly reported in *American Medicine*, and in this case there were no complications. At the same time I agree with Dr. Alt, that in extremely feeble persons who are not going to live very long, and with perfectly asceptic conditions, I think the operation would be justifiable.

Dr. Kyle, Indianapolis.—I would like to ask Dr. Suker what he thinks the result would be in dislocation of the lens in cataract cases complicated with diabetes.

Dr. Reynolds, Louisville.—I remember having seen the published statement that a few cases of reclination of cataract enjoyed good vision for about two years, and I think five years was found as the limit of useful vision. A thorough study of cases since that time has gradually extended the field of observation without increasing the period of time which elapses after what is called a successful reclination before complete blindness ensues from intraocular changes. I had a remarkable experience three years ago. A young woman less than thirty years of age had diffuse choroiditis in the right eye, followed by shrinkage of the optic disc and extinction of sight. One day she was playing with one of her children, leaning over on her right elbow on the side of the bed, when the little one, about two years old, struck his mother with his fist in the left and good eye. The eye became very much inflamed and a surgeon attempted an iridectomy, who had never used Jaeger's sclerotome, the triangular instrument. When he placed the point of the instrument, to make the puncture, the eye was suddenly turned up and the knife driven straight in, cutting off the periphery of the iris. Vitreous body escaped and he closed the eye up. I was sent for to see the case in consultation with the family physician and the gentleman who had done this unfortunate operation. I counseled rest in bed, muriate of pilocarpine, followed by sodium salicylate and exclusion of light from the eye. The patient made a perfectly satisfactory recovery except as to vision, and when the eye was uncovered the lens was found to be depressed. The lens being pushed downward, the patient enjoyed better vision over the dislocated lens by turning the head down. I hesitated about extracting that lens. I could not assure the patient of a strong probability of success that she wanted, and she was taken to Cincinnati where the operation was declined. She afterwards went to Pennsylvania and New York, and two years time elapsed and everybody advised against the operation. She returned to me imploring me to operate. I studied the case with deliberation and decided to extract the lens, but while I was sure of my ability to get it out, I was not sure of the amount of vision she would have. I extracted it without difficulty of any kind, and she is now able to read long primer type, and has gone on nearly ten years in that condition.

Dr. Suker, (closing discussion of his paper).—In answer to Dr. Reynold's point as to the number of years of useful vision following dislocation of the lens in the vitreous body, statistics will go to show that useful vision is often maintained for a period of from 15 to 20 years and sometimes longer. Bull, Wilder and Ayres, in the *Archives of Ophthalmology*, cite a series of cases in which the lens was depressed by traumatism, and useful vision had remained all the way from 10 to 15 years. Some of these cases came later on for operation on account of secondary glaucoma. Here, however, the proper surgical interference checked or relieved the glaucoma and the patient still enjoyed useful vision. I have a man under observation now who had his lens depressed some 30 years ago as the result of an accident. Though he has vitreous opacities, still with a 5 diameter lens he gets a vision of $^{20}/_{60}$; therefore I do not see that the question of time for which useful vision might be saved should constitute a point of contra-indication for the operation in suitable cases. With reference to Dr. Jackson's remarks in regard to epilepsy, I would say that an epileptic attack three or four days after the operation of extraction could produce but little harm, because by this time the corneal wound has sufficiently healed so as to be able to sustain any violence that an epileptic might undergo, save a direct injury to the eye. However, an epileptic, having 10 or 15 or more attacks during a day, is not the best patient upon whom to perform an extraction. I should, personally, prefer not to be the operator for an extraction in an epileptic if an attack should occur while he is on the table. As far as the reports of the operations are concerned with reference to the insane, they are good. In answering Dr. Alt's references to pathological changes following a depression, it is true that a lens depressed in the lower animals, especially the cat and a dog, as a rule produces serious complications. But why this is so and not so in man, is a point as not yet decided, for we do know that the human eye does tolerate a depressed lens, oftentimes for almost an indefinite period, with but slight pathological changes. However, a depressed lens will always produce more or less vitreous opacities, and when there is a retinitis or choroiditis present, these are intensely aggravated. Hence, a depression is not indicated in such cases. Still, the vitreous opacities ensuing do not so materially inter-

fere with the vision, and in such cases the vision obtained is often equal to that in like cases in which an extraction has been performed. In old people, on the other hand, the lens having been extracted under aseptic measures, the eye may still be lost, because the surgical interference is such a great shock that the ocular tissues suffer actual death in consequence thereof, and make a fertile ground for any suppurative process. It is just in such cases where the personal resistence or vitality is of such a low state as to preclude any other operative interference that depression is indicated when the other eye has been lost by suppuration. Dr. Kyle asked the question whether reclination is indicated in diabetes. I will say that I never considered diabetes as an absolute contraindication for extraction. Very seldom do we have any trouble in the healing of the wounds in such cases, provided the patient has previously undergone a thorough course of general treatment. I should think, however, that a depression in diabetes would be contra-indicated, for the reason that in such cases there might be a lurking retinitis or choroiditis which would eventually grow worse because of the presence of the lens in the vitreous body.

PAMPHLETS RECEIVED.

"Psychic Treatment," by E. C. Runge, M.D.

"Operation for Ptosis," by W. H. Wilder, M.D.

"Treatment of Epistaxis," by J. M. Kershaw, M.D.

"Leukosarkoma de l'oeil et de l'orbite," by Prof. Badal.

"The Treatment of Strabismus Other than Operative," by E. Jackson, M.D.

"Rapport sur la cécité et les aveugles en France," by Drs. Trousseau and Truc.

"The Class of Cases of Simple Chronic Glaucoma in which Operation is Not Advisable," by Ch. S. Bull, M.D.

"The Treatment of Thrombosis of the Lateral Sinus Following Middle Ear Suppuration," by E. B. Dench, M.D.

"Metatastic Choroiditis in the Course of Pneumonia Due to Grippe, Based on a Study of Six Cases, with Two Autopsies," by Ch. S. Bull, M.D.

A CASE OF SYMPATHETIC OPHTHALMIA, WITH COMPLETE RECOVERY OF BOTH EYES.*

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I REGARD the following case to be of sufficient rarity and interest to justify its report. It illustrates a type of sympathetic ophthalmitis which is amenable to treatment and which yields kindly to therapeutical measures and good nursing.

The principal object of this paper, aside from the case report, is to lay especial stress upon the value of the one great therapeutical agent—darkness—total darkness and complete rest for the retina and accommodation in the treatment of this and allied affections of the eye.

The writer has long had the opinion that all cases of inflammatory affections of the iris, ciliary, choroid, retina and optic nerve should be treated by *total darkness*, for it seems a fair and just argument that inflamed ocular tissues need rest and suspension of function quite as much as that a broken bone needs rest and a splint that secures complete functional abeyance.

Sympathetic ophthalmia is really a disease of rare occurrence, considering the number of eyes that are daily injured, but we have all seen it, and have felt the sinking of the heart when a case of injury that we have watched from the first comes in with irido-cyclitis of the good eye. It is a live subject, and interests us all, for the circumstances surrounding each case and its individual peculiarities are such that it never becomes hackneyed.

A few axioms we have learned from our own experience and the experience of others, e. g.:

That after the disease is once thoroughly started in the good eye it is generally too late to enucleate the injured eye.

That all operations (iridectomy, paracentesis, etc.) done with an attempt to stay the progress of the disease or bring about a healthy reaction usually have just the opposite effect.

That sympathetic *irritation* is one thing and sympathetic *inflammation* entirely different, the two being apparently in

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no wise connected; for the latter usually appears without any prodromal signs—it comes like a thief in the night, unannounced and quite unexpected.

That the kind of injury which produces sympathetic inflammation is usually a penetrating wound of the ciliary zone, with or without the entrance into the eyeball of a foreign body.

That there is no rule that can be laid down as to when sympathetic ophthalmia will occur, although the majority of cases develop between two and eight weeks after the primary injury.

That the one disease that produces sympathetic ophthalmia is chronic plastic uveitis.

Although we have gleaned a few facts concerning the clinical manifestations of the disease in question, we know but little of the real modus operandi of the transference of the inflammation from the injured eye to its fellow. Many are the theories advanced, which we read with interest, accept, reject or hold in abeyance, according to our individual fancy.

The following case shows that recovery is sometimes possible even when there is present distinct irido-choroiditis and well-marked neuro-retinitis in the sympathizing eye.

It was a case of penetrating injury to the ciliary zone of the left eye, with hernia of the iris, where an iridectomy was performed through the original wound and a superficial stitch applied to the sclera. There was no evidence of struma, syphilis, rheumatism or malaria present. The patient was a healthy school-boy.

J. D., æt. 14, referred by Dr. M. B. Brady, Cincinnati, O., Jan. 11, 1901. While playing with schoolmates was hit in the left eye by a stick or stone—does not know which. Dr. Brady was called, who, recognizing that there was a penetrating injury to the eyeball, sent the patient to the Presbyterian Hospital, and asked me to take charge of the case. Dr. J. W. Murphy and I saw the patient three hours after the accident.

Status Præsens.—Right eye normal. Left eye—there exists a ragged penetrating wound of the sclero-corneal margin outwards and slightly downwards, half of which is in the cornea and half in the sclera. The wound is ragged, and

about 12 mm. long, involving the ciliary zone. Through the lips of the wound there presents a hernia of the iris. The pupil is pear-shaped and drawn to that side. The anterior chamber is shallow, the tension minus, the red reflex normal, and central and peripheral vision good. The patient is surly and objects to operation, and so it is determined to administer chloroform.

The Operation.—Patient takes the anæsthetic well. The eye is sterilized and douched with warm boracic acid solution, the iris grasped with strong iris forceps, and iridectomy performed. Care is taken to see that the cut edges of the iris are liberated from the incarceration by means of a spatula. The wound gaps, and there seems to be a rupture of the ciliary muscle. It is therefore thought wise to suture the sclera. This is done, but care is taken to get only the outer layers of the sclera in the stitch. This procedure gives the wound an excellent appearance, for its edges are now in perfect apposition. Patient put to bed, with both eyes bandaged.

The proper time to mention sympathetic ophthalmia to the patient or his friends is, in my judgment, before any operation is attempted. We have only to keep in mind the kind of injury that produces it, viz.: generally a penetrating wound of the sclero-corneal junction or the entrance into the chambers of the eye of a foreign body. If your case presents this state of affairs, you have only to say to the patient or guardian: "It is the kind of injury that sometimes produces trouble with the uninjured eye through sympathy." This will awaken him to the real possibilities of the case, and will protect the surgeon, at least to the extent that he knew beforehand of the serious nature of the injury. This is exactly what I did, and the mother, who brought the boy to the hospital was thus prepared for what in fact actually occurred.

The Course. — Healing took place by first intention. Atropine daily used in the injured eye. The stitch was removed in six days. The ciliary ectasia disappeared; a firm flat scar formed, and the boy was sent home in two weeks, with the eye well on toward recovery. Visits were made every second day to my office, and in one month from the date of the injury the eye was considered practically well.

The dark shade was still worn, however, and the boy kept out of school and not permitted to read. Two weeks after the injury, R. V. $^{20}/_{20}$, L. V. $^{20}/_{40}$. Ophthalmoscopic examination: R. E., entirely negative. L. E., large string-like opacities in the vitreous, and some considerable exudation and cloudiness in the forward part of the vitreous, corresponding to the seat of the lesion. Optic disk appears hazy, probably due to vitreous opacities.

On several occasions, while the boy was being watched and treated at my office, I warned the mother to keep a sharp lookout on the good eye, and made it a rule to test both eyes myself.

The Sympathetic Outbreak. — On March 2, 1901, viz., seven weeks after the injury, the boy was brought to my office by his mother, who stated that since yesterday he complained of pain, photophobia and blurred vision in his good eye. She had looked at the eye the night before, and noticed the injection of the globe. Remembering my frequent admonitions to watch the good eye she brought him at once, otherwise would have paid no attention to it.

Examination of the uninjured eye (*Right*).—Circumcorneal injection present; tension, minus ½: anterior chamber deep; iris slightly off-colored; pupil slightly contracted; margin of pupil very ragged; *posterior synechiæ abundant—in fact, the entire pupillary margin is glued to the lens capsule*, but ciliary tenderness absent; field of vision normal, and vision $^{20}/_{30}$.

I kept the boy in my waiting rooms an hour, during which time I instilled 1 per cent. atropine solution every 15 minutes and succeeded in breaking up all the adhesions but two.

Ophthalmoscopic examination.—Dioptric media clear, aside from slight murkiness of the aqueous. A ring of iris pigment exists on the lens capsule from synechiæ; *optic nerve head slightly swollen*, veins entering the disk are overfull and tortuous; disk margin not clearly defined.

Examination of the injured eye. (*Left*).—Eyeball injected slightly, (less than R). Scar flat and slightly sensitive; eyeball slightly tender; anterior chamber deep; pupil dilated and coloboma has free edges; lens clear, aside from some pigment dots on the anterior capsule; vision $^{20}/_{50}$.

Ophthalmoscopic examination.—Vitreous contains large mass of floating lymph, seeming to be attached well forward near the floor of the eye just behind the ciliary body and looking like a bunch of cotton. Optic nerve considerably swollen and blood vessels of the disk are enlarged and overfull, the veins being tortuous.

Diagnosis.—Sympathetic irido-choroiditis and neuro-retinitis.

March 3, (next day).—R. E: Pupil now dilated ad maximum and is round; a circle of pigment exists on anterior capsule of lens, showing yesterday's position of the pupillary margin; neuro-retinitis marked, but no exudation present. L. E. same as yesterday.

March 4.—R. E.: Some exudation at the margin of the disk; no floating opacities can be seen yet. L. E: Optic nerve very cloudy, being covered with a fog-like exudate, which extends into the surrounding retina and vitreous.

Dr. Robt. Sattler saw the case with me in consultation. His diagnosis was sympathetic ophthalmia also. A guarded prognosis was given. His advice was against any operation but in favor of watchful care and vigorous local and general treatment. The patient was sent to the Presbyterian Hospital.

Treatment.—Leeching both eyes, four leeches to each temple and two to each side of nose near inner canthus. Atropine drops in eye, 1 per cent. t. i. d. Inwardly, K. I., gtt. x. t. i. d. Patient kept in bed; total darkness.

The object of total darkness was to relieve the congested retina of the task of eliminating the decomposed photo-chemical products resulting when light enters the eye. The more advanced studies of the physiology of sight production teach that the action of light on visual purple (rhodopsin) which normally exists in the healthy retina, is to decompose it into "visual yellow" (xanthopsin) and then into "visible white" (leukopsin), the latter product being slightly irritant to the cones assisting in the sensation of vision. There is also no doubt cellular waste and regeneration, resulting from the action of the light on the retina, which in a normal retina is healthy and physiological, but in a congested one no doubt wearisome and even toxic, because of the faulty elimination of the burnt up cells. In a healthy retina these by-products,

the result of actinism, are quickly removed, probably by the lymph stream and fresh visual purple regenerated. This process is repeated with never-ceasing change as long as light floods the eye and in proportion to its intensity. Therefore in this case of sympathetic ophthalmia I determined to give the retina absolute rest. This was done by means of Ring's eye mask. I had it lined with black silk and a piece stitched around the edge like an apron to shut out every vestige of light. This method had the additional advantage that we could air and light the room at times without subjecting the patient's retina to the action of light.

March 13.—The patient was taken to the ophthalmoscopic room of the hospital and the eyes subjected to a short examination, with the following results: Under atropine—R. +1.0 D. V. = $^{20}/_{20}$. L. + 1.50 C.Ax. 15 V. = $^{20}/_{25}$. The optic nerve and retina of the sympathizing eye still appear misty, the veins tortuous, some exudation exists on the disk and the margins are distinctly fuzzy in appearance. The injured eye (L) shows large masses of lymph in the vitreous chamber and the optic disk can barely be made out, margins not at all, veins swollen and tortuous.

It is remarkable that the vision is so good while the optic nerve and retina are so œdematous. Patient pale; pulse, 100. Took off of K. I. and treatment changed to salicylic acid and ammon carb., mixture, viz:

℞ Acidi Salycil. ..... ʒv.
Ammon Carb. ..... q. s.
Ol. Gaultheria ..... gtt. x
Glycerine ..... ʒv.
Aqua menth. pip. ..... q. s. oz. iv.
Misce. Sig. Teaspoonful every three hours.

The atropine continued once a day and steam baths ordered every second day.

March 18.—Eyeballs not injected; pupils ad maximum; no ciliary tenderness; tension normal; vision, R. and L. $^{20}/_{20}$. Patient exclaims "how clear everything looks." Ophthalmoscopic examination: Sharp neuro-retinitis still present in both eyes; pigment deposit on both lenses, vitreous deposits are clearing. Treatment and darkness continued.

March 25.—No floating opacities can be seen in R. vitreous chamber and those in L. disappearing. Optic neuro-re-

tinitis receding, marked improvement noted in appearance of the eye ground.

It would be tiresome to listen to the clinical notes which I kept from this on; suffice it to say that we kept his eyes in total darkness for six weeks after the sympathetic trouble developed, and continued the steam sweats and salicylate of ammonium mixture internally. The neuro-retinitis gradually subsided in both eyes, the sympathizing eye, being the least affected, was the first to clear up, and on May 3d, two months after the incipiency, was pronounced well. The exudation on the optic disk and retina of the injured eye was slowly resorbed, the vitreous gradually clearing, and on August 1st, five months after the beginning of the attack, the left fundus was also pronounced normal, eyeballs free from irritation.

After recovery, the only evidence that sympathetic ophthalmia ever existed is the ring deposit of brown iris pigment on the anterior capsule of the lens of the sympathizing eye (R.), and the presence of too many arteries and veins emerging from the disk of each eye, but the details of the fundi are perfectly clear and the eyes are apparently perfectly sound.

The last time I saw the patient was a few days ago. It is now a year since the sympathetic inflammation disappeared. His eyes are perfectly well, vision normal in each, no floating opacities in either. The old scar in the cornea and sclera is covered with normal epithelium, and there is not the slightest evidence of inflammation or irritation in either eye. The patient attends school, and is free from all ocular disturbance, subjective and objective.

I have observed in cases of spontaneous detachment of the retina, optic neuritis, and in sympathetic ophthalmia that the pulse rate is high, the quality full, radial artery soft and easily compressible; also that a slight febrile reaction occurs in the evenings. Evidently the entire vascular system, to a slight degree at least, is affected. Perhaps there is a systemic poison at work, which affects the pulse and bodily temperature. This patient had pulse 100 to 110.

From this case we may draw the following conclusions:

That sympathetic ophthalmitis occurring in young persons is often not so violent nor so fatal to sight integrity as the same disease in adults.

That if no foreign body has remained in the eyeball it is often wise to watch and wait.

That the rational treatment is complete rest to the retina and accommodation, which can only be brought about by total darkness.

DISCUSSION.

Dr. Alt, St. Louis.—This is a most interesting subject. It is impossible to know how large the number of cases is in which a cure of sympathetic ophthalmia was observed, but while it is small in comparison to the number occurring, yet there are a series of cases on record. In my own practice I have seen a few such cases. The doctor is to be congratulated on the result in his case whether his particular management of it was the only reason for recovery or not. Whether keeping the patient in the dark and in bed all the time, had the effect claimed for it I have my doubt. I also give large doses of the salicylate of sodium, and can add to the praise given this remedy. Since Gifford reported a number of astonishing results with this drug in sympathetic ophthalmia, I have had one case with severe sympathetic iridocyclitis, with the usual formation of cataract. Large doses of salicylate of soda have dispelled all inflammatory symptoms, and I am now waiting for the time to extract the lens. I want to add my testimony regarding the wonderful effect of salicylic acid in these cases.

Dr. Vail, (closing discussion).—In regard to the frequency with which cures occur, I wish to say that I could find no cases reported in the Archives. Somewhere I found one case of complete recovery of one eye and partial in the other. I think a cure is very rare. No doubt cases have been reported, but I could find no duplicate of this case. Dr. Randolph of Baltimore said there were 19 cases reported in which there has been recovery, but I think he means recovery of the first affected eye.

MEDICAL SOCIETIES.

PROCEEDINGS OF THE OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM.*

DR. DAVID LITTLE, President, in the Chair.

Meeting on May 1, 1902.

MR. H. GRIMESDALE showed a case of paralysis of the cervical sympathetic. There was slight enophthalmos; the pupil was small, and reacted very badly. Vision was bare P. L. T—3. Cocaine had no action on the pupil nor on the eyelid, and there was a gray reflex in the pupil, possibly a detached retina. Mr. Homes Spicer thought that a purulent retinitis would explain all the symptoms, and he thought the case was one of those usually called pseudo-glioma. Mr. Grimesdale thought that the failure of the reaction of cocaine proved it to be a paralysis of the sympathetic. Mr. Grimesdale also showed a case of congenital unilateral ptosis in which movements of the eyelids were associated with suction. Mr. Adams Frost showed a case of multiple ruptures of the choroid caused by a blow from the buckle of a belt. Some of the lesions seen were more like hæmorrhages than ruptures. Mr. Rockliffe had recently seen two similar cases due to a blow with a steel hawser. Mr. Fisher said that, if some of them were hæmorrhages, they were in the choroid, and that, therefore, a rupture of some part of the choroid must have taken place in order to produce them. Mr. Frost also showed a case of unusual retinal reflex. The fundus was unusually dark, and the patient's father had retinitis pigmentosa. Mr. Frost looked upon this case as physiological. Mr. Treacher Collins showed a case presenting unusual opacities in the central part of each cornea. The patient was a carman, aged 33, whose sight had been failing for two years. There had never been any real keratitis, but in the central part of each cornea were numerous white radiating lines of opacity; the periphery of

*British Medical Journal.

the cornea was quite clear. Mr. Collins thought that these opacities were in the anterior layers of the substantia propria, and were due to infiltration and degeneration with small calcaerous deposits. Dr. Bronner thought they were very superficial, and might be scraped. Mr. Lawford had a somewhat similar case in a woman, aged 21, who had had recent ulcerative keratitis. This had given rise to a central corneal opacity without injection, but with great photophobia. He scraped the cornea, and this was now being examined bacteriologically. He suggested that this might be done in the present case. Mr. L. V. Cargill showed a case of corneal opacity after instrumental delivery. The case was a difficult brow presentation in which great force had been used with the forceps. The condition was clearing, and only a slight band of opacity now remained across the cornea. Mr. G. W. Thompson showed a case of obliteration of retinal artery following attacks of temporary amblyopia. The patient was a woman who for the last ten years had suffered from severe headaches, with temporary loss of vision. In September last she had an attack from which the vision had never properly recovered, the dullness she then noticed persisting to some extent. As a rule the vision returned after the attack had passed off. The disk was now partly atrophied. Mr. Lawford thought common temporary loss of vision was in association with migraine, and how seldom it was that ophthalmoscopic changes were seen in connection with it. Some of them might be caused by spasm of the vessels, which left the artery no less patent than it was before. He had recently had under his care a man, aged 35, who habitually overworked himself, and who after being much underfed during lent had developed dimness in the right eye which had persisted. For many years he had had temporary attacks of dimness, but now there was partial obliteration of one of the retinal arteries with hæmorrhages, and at other places were seen old changes, which apparently indicated lesser lesions of a similar nature in times gone by. Mr. A. H. Thompson asked if it were a case of endarteritis obliterans as he hardly thought spasm would last for so long a time. Dr. James Taylor thought that this case was similar to cases of temporary loss of function of some portion of the brain. This sometimes led to permanent changes. Dr. R. D. Batten

discribed a somewhat similar case. Mr. Roll drew a parallel between this condition and Raynaud's disease. Mr. Fisher thought the tendency of opinion was that arterial degeneration was always present. This he did not consider was the case. Mr. Thompson, in reply, was inclined to the opinion that there was endarteritis present. Dr. Bronner showed some sections of a conjunctival lipoma in an infant. Mr. Rockliffe showed a case of very recurring glioma of the orbit. Mr. Lang showed a child whose orbit had been wounded with a pitchfork. The ophthalmoscope showed a white patch of exudation where the disk should be, and he thought that the optic nerve was torn across close behind the globe.

PAMPHLETS RECEIVED.

"Surgical Treatment of Adenoid Growths," by J. M. Kershaw, M.D.

"Treatment of Œdema or Dropsy of the Uvula," by J. M. Kershaw, M.D.

"Double Optic Neuritis Occurring During Lactation," by J. Green, Jr., M.D.

"Rapport sur les complications orbitaires et oculaires des sinusites," by F. de Lapersonne, M.D.

"The Indications for the Radical Mastoid Operation, with a Description of the Technique," by D. S. Ronner, M.D.

"Superheated Compressed Air in the Therapeutics of Chronic Catarrhal Otitis Media," by G. W. Hopkins, M.D.

"Ocular Affections Associated with Glycosuria, with Especial Reference to Central Amblyopia," by W. L. Pyle, M.D.

"The Use of the Ice Coil in the Abortive Treatment of Acute Inflammation of the Mastoid Process," by E. B. Dench, M D.

"Report of Eighty-six Successive Cataract Operations in the Philadelphia Hospital, with Remarks," by G. E. de Schweinitz, M.D.

"Transplantation of a Large Wolff Graft Forming a New Lining of the Orbit, and Permitting the Wearing of an Artificial Eye," by Ch. H. May, M.D.

ABSTRACTS FROM MEDICAL LITERATURE.

By W. A. SHOEMAKER, M.D.
ST. LOUIS, MO.

OCULAR AFFECTIONS ASSOCIATED WITH GLYCOSURIA WITH ESPECIAL REFERENCE TO CENTRAL AMBLYOPIA.

Walter L. Pyle (*American Medicine*, April 19) says: "According to Kleen, two-thirds of all diabetic patients suffer from some disturbance of vision, and occasionally the ocular symptoms are the first noticed, although generally they appear after the disease is well established. Bouchardot says that there is some visual disturbance in 20 per cent. of diabetic cases, commonly with no ophthalmoscopic signs. Hirschberg believes that the ocular changes are frequently overlooked, and that in very chronic cases retinal lesions are always present. Lagrange observed in the *Ophthalmic Clinic* of Bordeaux among 20,000 cases, 53 with diabetic affection. In 100 diabetic cases examined by Dr. W. O. Moore, there were 21 instances of ocular affection, distributed as follows:

Amblyopia without ophthalmoscopic change	4
Cataract	4
Retinitis (glycosuric)	5
Hemorrhage and floating bodies in the vitreous	4
Paralysis of accommodation	3
Iritis	1
	21

The means by which glycosuric disorders may affect the eye are as follows:

1. Abstraction of water from the ocular tissues, due to the increased density of the blood, as, for instance, in diabetic cataract.

2. The presence of sugar or its derivatives in the intraocular humors.

3. Lessened resistence of the ocular tissues, the result of general nutritional derangement.

4. The presence of a toxic substance in the blood, causing irritation, inflammation, and degeneration.

5. Through the cachexia incident to the disease, the blood-vessel walls are so affected as to allow transudation of the

corpuscular elements into the retinal tissues. Again, the smaller vessels, particularly the capilliaries, are very susceptible to the influences of toxic substance in the blood, and undergo certain degenerative changes that favor hæmorrhage. In the retina this causes localized degeneration on account of the absence of arterial anastomosis. Hæmorrhage into the sheath of the optic nerve may be a cause of the optic atrophy observed in diabetes.

The author concludes his article with the following summary:

1. Diabetes mellitus or other disturbance of the carbohydrate metabolism may affect any portion of the visual apparatus.

2. The ocular changes may be produced by chemic or physical means, or indirectly through the associate general debility.

3. The ocular affections may vary in intensity from a slight failure of accommodation to a formidable hæmorrhagic retinitis and total optic nerve atrophy. Minor visual disturbances are often made worse by fatigue or increased cardiac action, and may improve after prolonged rest or decrease of vascular tension.

4. The intraocular disturbances may be exclusively unilateral, and there is never seen ophthalmoscopically inflammation of the optic nerve—important differences from the changes in albuminuria, syphilis and other blood dyscrasias.

5. It is not uncommon to find albuminuria coexistent with glycosuria, and the retinal changes may present a mixed picture, or a typical albuminuric retinitis may be present in a patient with diabetes.

6. Central amblyopia may exist in glycosuria entirely independent of the toxic influence of alcohol and tobacco, or in patients addicted to the habitual use of these substances, this may be the prominent factor in causation. In these cases the initial lesion may be in the ganglion cells of the retina; the inflammation of the "papillomacular fibers" of the temporal half of the optic nerve being secondary to the retinal changes.

7. In chronic cases of glycosuria, with the exception of cataract, the ocular symptoms are often present when the constitutional and urinary symptoms are not marked.

8. The ocular symptoms may be the first to lead the patient to seek medical advice. Therefore glycosuria should be suspected in the following conditions:

(*a*) Premature presbyopia.

(*b*) Unexplained mydriasis or cycloplegia.

(*c*) Sudden change in the refraction; particularly marked development or increase of myopia past middle age, without cataractous changes.

(*d*) Intractable iritis.

(*e*) Cataract in young or middle-aged persons. An examination of the urine is advisable even in cases of senile cataract, as the etiology has a bearing on the prognosis of operation.

(*f*) Retinitis, particularly of the hæmorrhagic variety.

(*g*) Unexplained optic nerve atrophy.

(*h*) Sudden and marked amblyopia, particularly central, without visible fundus changes.

9. The prognostic significance of the ocular disturbances is not definitely established, on account of great differences in pathogenesis, severity, and ultimate issue of the numerous forms of glycosuria. Even in well-marked cases not only many forminable eye-lesions improve, but the patient's general health may be restored. Again the ocular symptoms may remain stationary and the general health improve, or a case of diabetes mellitus may proceed rapidly to a fatal termination without showing marked ocular disturbances. Hæmorrhagic retinitis and amaurosis preliminary to coma are the most serious symptoms. The ophthalmoscopic observation of greatest value in prognosis is the state of the retinal vessels, as this may be taken as an index of the patient's general vascular condition.

DIABETES AND THE EYE.

Busby Allen (*New York Medical Journal*, March 29) says that one of the early symptoms of diabetes involving the eye, is the loss of power of the ocular muscles, those supplied by the third nerve being the most frequently involved. These paralyses are usually partial and frequently disappear only to return again. They bear no constant relation to the severity of the disease. Paresis of accommodation is partial and usually

appears early. If it occurs in a person under 35, and is progressing, it should lead to the suspicion of diabetes. A cataract occurring in young persons, ripening within a few weeks and involving both eyes, would almost certainly be diagnosed as diabetes, while in those of middle age the progress is slower and a diagnosis of diabetes cannot be made without an examination of the urine. The retinitis of Bright's disease at times resembles very closely that of diabetes and the two are often associated. In diabetes the optic disc is not usually affected but there is an an optic neuritis due to glycosuria. In operating for cataract in diabetes, a time should be selected when there is a lull in the disease. A simple ulcer of the cornea in diabetes may lead to a speedy loss of the eye.

PHLEGEMONE DER ORBITA IN IHRER BEZIEHUNG ZU DER FRAGE DER SYMPATHISCHEN OPHTHALMIE.

Albert B. Hale (*Medicinische Monatschrift, N. Y.* February) concludes, from the three cases which he reports, that the theory of transmigration of bacteria in the production of sympathetic ophthalmia will not account for all the facts, especially when there is a long interval between the injury of an eye and the infection of its fellow. The case of Schmidt Rimpler, published in the *Deutsche Med. Wochenschrift*, No. 27, 1900, in which an echinococcus of one eye was accompanied by a sympathetic ophthalmia of the other is still more difficult to explain by this theory. The author thinks that sympathetic ophthalmia is a neuritis which is not produced entirely by the migration of micro-organism, but that in any case where it has to do with the growth of bacteria it can be produced only by the irritation of tissues by the toxins thus produced.

THE MANAGEMENT OF CROSSED EYES IN CHILDREN.

Waller R. Parker (*The Physician and Surgeon*, January) emphasizes the importance of early treatment of strabismus; in children who are too young to wear glasses, he does not allow the use of books, pictures and toys that require close observation, substituting wagons, hobby-horses, balloons, etc., which do not tax the vision. If these measures do not prevent the development of squint, the author recommends a weak solution of atropine, used daily, to suspend the power of

accommodation. The child is managed in this way until old enough to wear glasses, which are tolerated by many children as early as three years. A full correction of the refractive error should be given. If the constant wearing of glasses does not correct the squint, the good eye should be covered for an hour twice daily to enforce the use of the squinting eye. By this means the vision may be improved and the loss of co-ordination corrected.

The stereoscope can often be used to advantage in older children. The vast majority of cases, the author thinks, will not be cured by means other than surgical; and if at the sixth or seventh year the squint is constant after having constantly worn glasses, surgical procedures should be undertaken. Success requires the careful study of each individual case.

THE TREATMENT OF CONGENITAL LENS DISPLACEMENT.

L. D. Brose (*Ophthalmic Record*, March), from his experience, and reported cases, recommends the following treatment:

1. By trying to secure satisfactory vision by properly adjusted lenses.

2. Failing in this, he would determine, by the help of a mydriatic and a stenopetic disk, whether a small iridectomy will give satisfactory vision, and, if so, perform it.

3. When removal of the lens is necessary, he recommends discission in cases under 30, and extraction in those over 30 years of age, on account of the danger of secondary glaucoma after discission in the latter class of cases. The author instructs the patient from the beginning that this condition has a tendency to grow worse with time, and cautions him to report at once in case the eye becomes painful or vision worse.

UNRELIABILITY OF THE OPHTHALMOMETER AND THE SHADOW TEST.

Swan M. Burnett (*Ophthalmic Record*, January) says: "The human eye is not an optical instrument constructed on a fixed and uniform plan, even in the so-called normal optical condition. There are as many variations from a conventional standard, almost, as there are eyes. Small these differences

may be in some instances, but still demonstrable even by our relatively coarse instruments in everyday use. Take any dozen individuals consecutively and examine them with the ophthalmometer of Javal, and no two persons will be found (and hardly the two eyes of the same person) whose corneal radii are exactly the same; and the refraction of the cornea will bear no constant relation to the refraction of the eye as a whole. It is now known, by our abundant experience, that the astigmatism of the cornea, as measured by that most ingenious instrument, gives us no uniformly trustworthy evidence as to the actual amount from which the eye suffers. It is these fundamental inconsistencies of construction, of which this is only one, that bar the way to a reliable application of any one of our objective instruments or methods for the determination of the refractive condition of the eye.

"For just the same reasons the shadow test, which obtains its results from the refraction of the eye as a whole, cannot be relied upon with certainty, notwithstanding the claim of some experts that they can determine the refraction within a quarter of a dioptre. In the general run of cases the movements of the shadow area are entirely misleading. This is especially manifest when the eye is under the influence of a mydriatic, the wide pupil opening up all the refractive irregularities the eye is possessed of. All of the well-known objective methods of examination give us most valuable aid, and each should be applied with all the accuracy possible. The court of last appeal, however must be the trial lense and the test types."

PAMPHLETS RECEIVED.

"Empyema of the Frontal Sinus. Some Obervations on Its Treatmemt," by G. L. Richards, M.D.

"An Unusual Case of Traumatic Rupture of the Membrana Tympani," by G. L. Richards, M.D.

"Beitrag zur Kentniss und Entwicklungeschichte der hinteren Irisschichten," etc., by M. A. Szili, Jr., M.D.

"Relapsing Traumatic Bullous Keratitis," by G. E. de Schweinitz, M.D.

BOOK REVIEWS.

THE OPTICIAN'S MANUAL. VOL. II. A TREATISE ON THE SCIENCE AND PRACTICE OF OPTICS. Compiled from the Serial Written by C. H. BROWN, M.D. [*The Keystone*. Philadelphia. 1902. Price, $2.00.]

This is a good and clear treatise on the errors of refraction and their correction.

Why the opticians should have a special manual on these subjects, which are to be found in dozens of good text-books, is an open question. There seems to be no particular need for it, in spite of the statement, made in the preface, that "there has been no treatise which could be truly described as covering completely the vast modern science of refractive optics."

THE DIAGNOSIS OF NERVOUS AND MENTAL DISEASES. By HOWELL T. PERSHING, M.Sc., M.D.. [Philadelphia: P. Blakiston's Son & Co. Price, $1.25.]

The manual before us is intended to facilitate the recognition of mental and nervous diseases by those who are not specialists in neurology. With such an aim, it has a particular field of usefulness of its own, and it seems to be well able to fulfill its mission. The text is clear and well written, and the book is of decided merit. ALT.

PAMPHLETS RECEIVED.

"A Series of Mastoid Operations," by Ch. H. May, M.D.

"Optic Neuritis in the Young. Report of Five Cases," by W. Cheatham, M.D.

"Histological Description of an Eyeball with Dropsical Degeneration of the Nuclei and Protoplasm of the Rod and Cone Visual Cells of the Retina which Clinically Simulate Glioma," by G. E. de Schweinitz, M.D., and E. A. Shumway, M.D.

"A New Ophthalmoscope," by Ch. H. May, M.D.

"Color Perception, Normal and Subnormal," by Ch. A. Oliver, M.D.

"Functional and Paralytic Strabismus," by D. B. St. J. Roosa, M.D.

"Enormous Naso-Pharyngeal Soft Fibroma," by C. R. Holmes, M.D.

"Two Cases of So-called Retinitis Proliferans, Both Bilateral," by G. C. Pardee, M.D.

"Hermann von Helmholtz, the Inventor of the Ophthalmoscope," by C. A. Wood, M.D.

"Amaurosis, and Its Treatment by the Subcutaneous Injection of Strychnia," by H. Derby, M.D.

"The Diagnostic Value of Ocular Changes in Tumor of the Cerebellum," by Ch. A. Oliver, M.D.

"The History of the Invention and of the Development of the Opthalmoscope," by H. Friedenwald, M.D.

"A Successful Case of Extensive Blepharoplasty for the Removal of an Epithelioma," by Ch. A. Oliver, M.D.

"An Experimental Study of the Effects of Change of Color upon Pigment Bacteria," by Ch. A. Oliver, M.D.

"Clinical History of a Case of Blindness from Congenital Deformity of the Occiput," by Ch. A. Oliver, M.D.

"Concerning the Treatment of the Apparently Unaffected or at Most but Slightly Involved Eye in Cases of Monolateral Glaucoma," by G. E. de Schweinitz, M.D.

ERRATUM.—On page 160 (May number) lines 12 and 14 from below read iodine instead of codeine.